

No. 765,921.

PATENTED JULY 26, 1904.

H. HAGER.  
AUTOMATIC WEIGHING SCALE.

APPLICATION FILED MAR. 8, 1904.

NO MODEL.

2 SHEETS—SHEET 1.

FIG. 1.

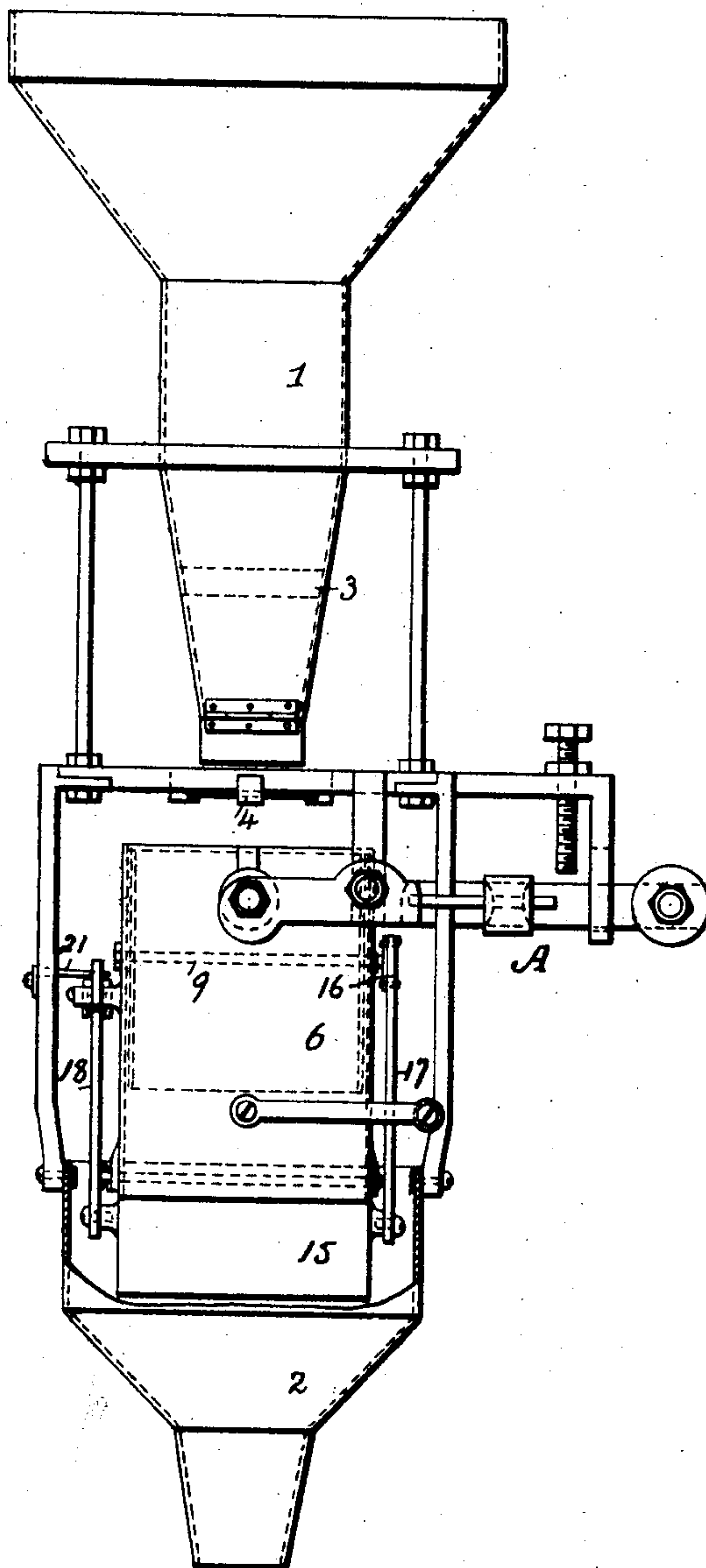
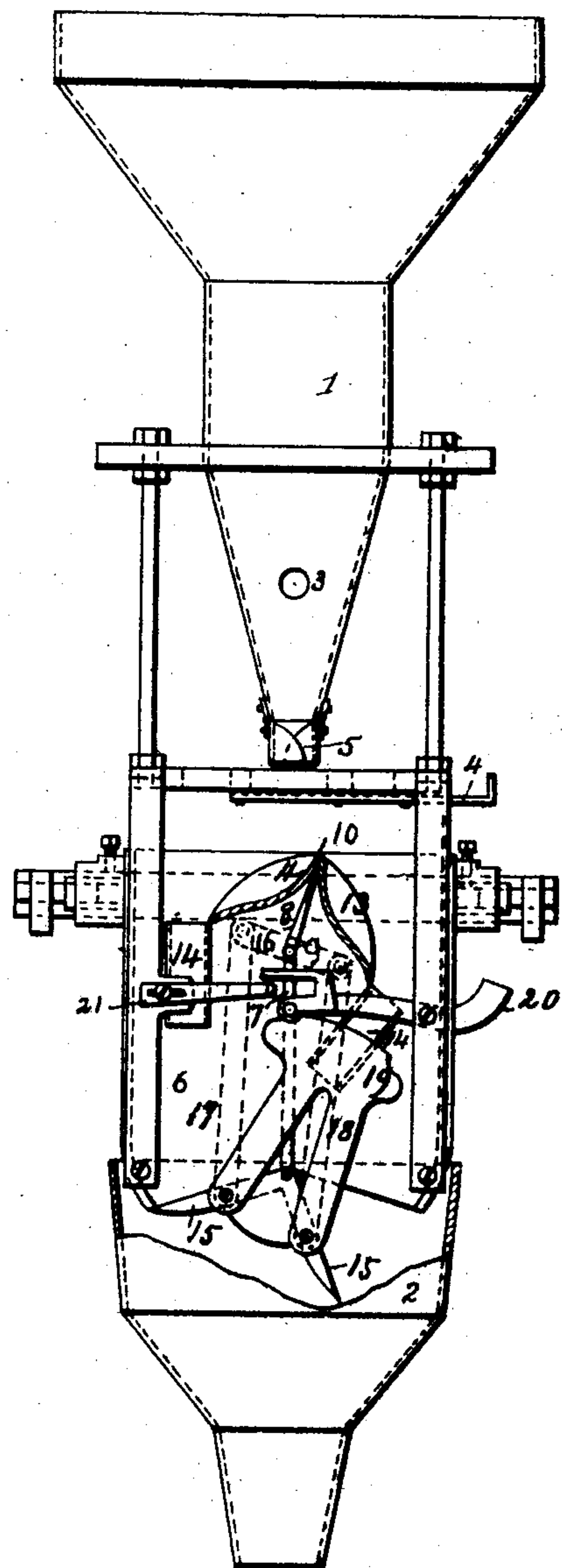


FIG. 2.



Inventor

Witnesses

Harry L. Amer.  
E. E. Masson

Harry Hager  
By Jay D. Miller

Attorney

No. 765,921.

PATENTED JULY 26, 1904.

H. HAGER.  
AUTOMATIC WEIGHING SCALE.

APPLICATION FILED MAR. 8, 1904.

NO MODEL.

2 SHEETS—SHEET 2.

FIG. 3.

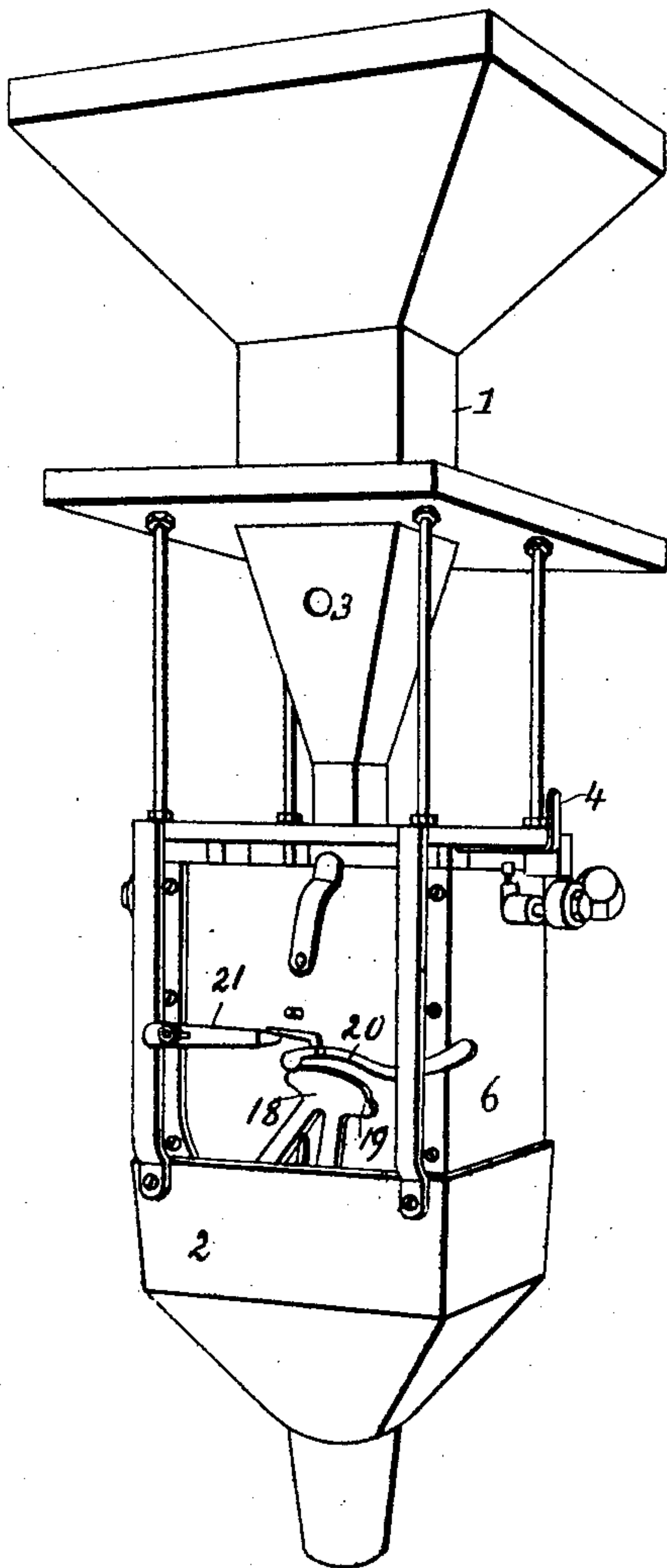


FIG. 4.

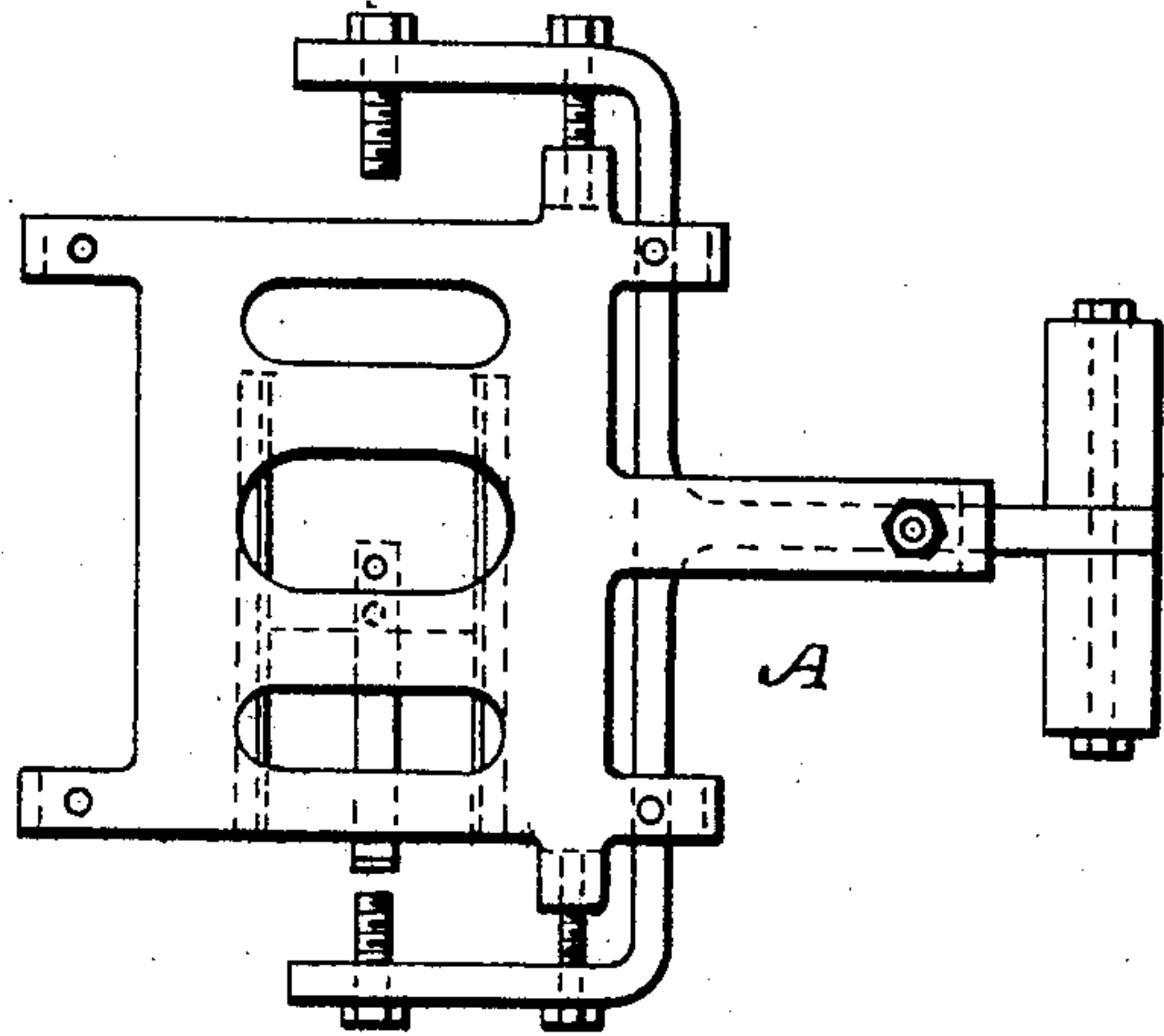


FIG. 5.

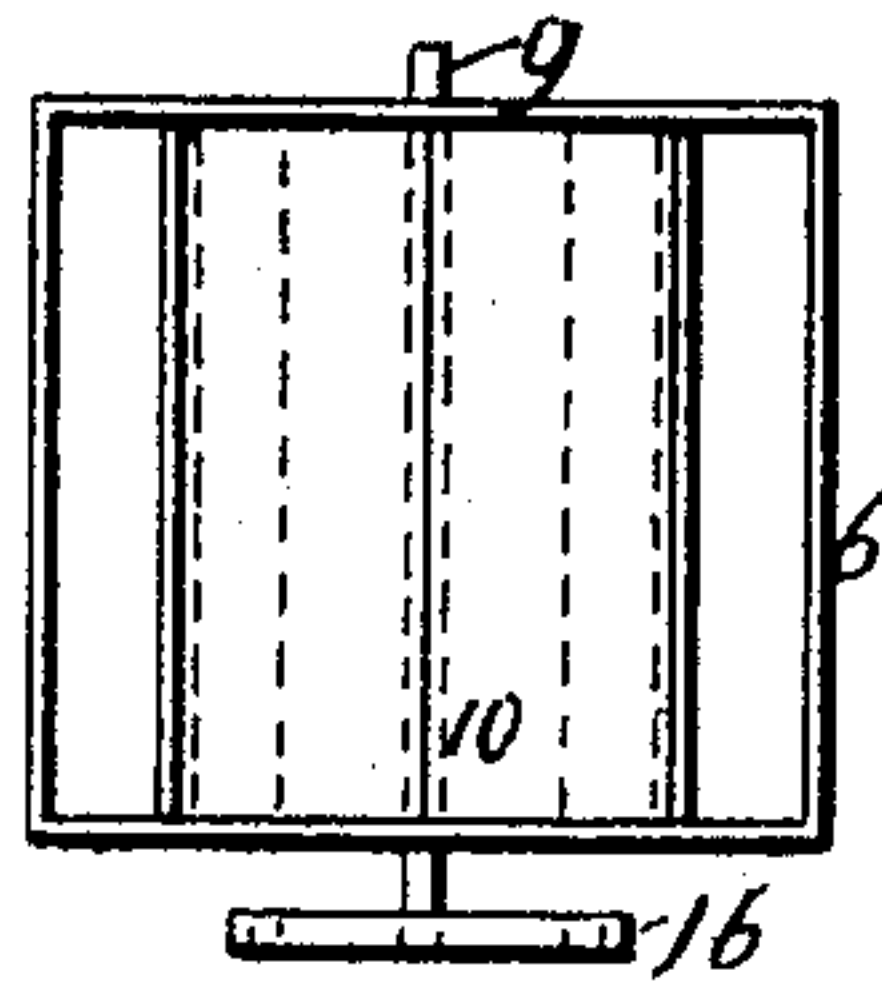
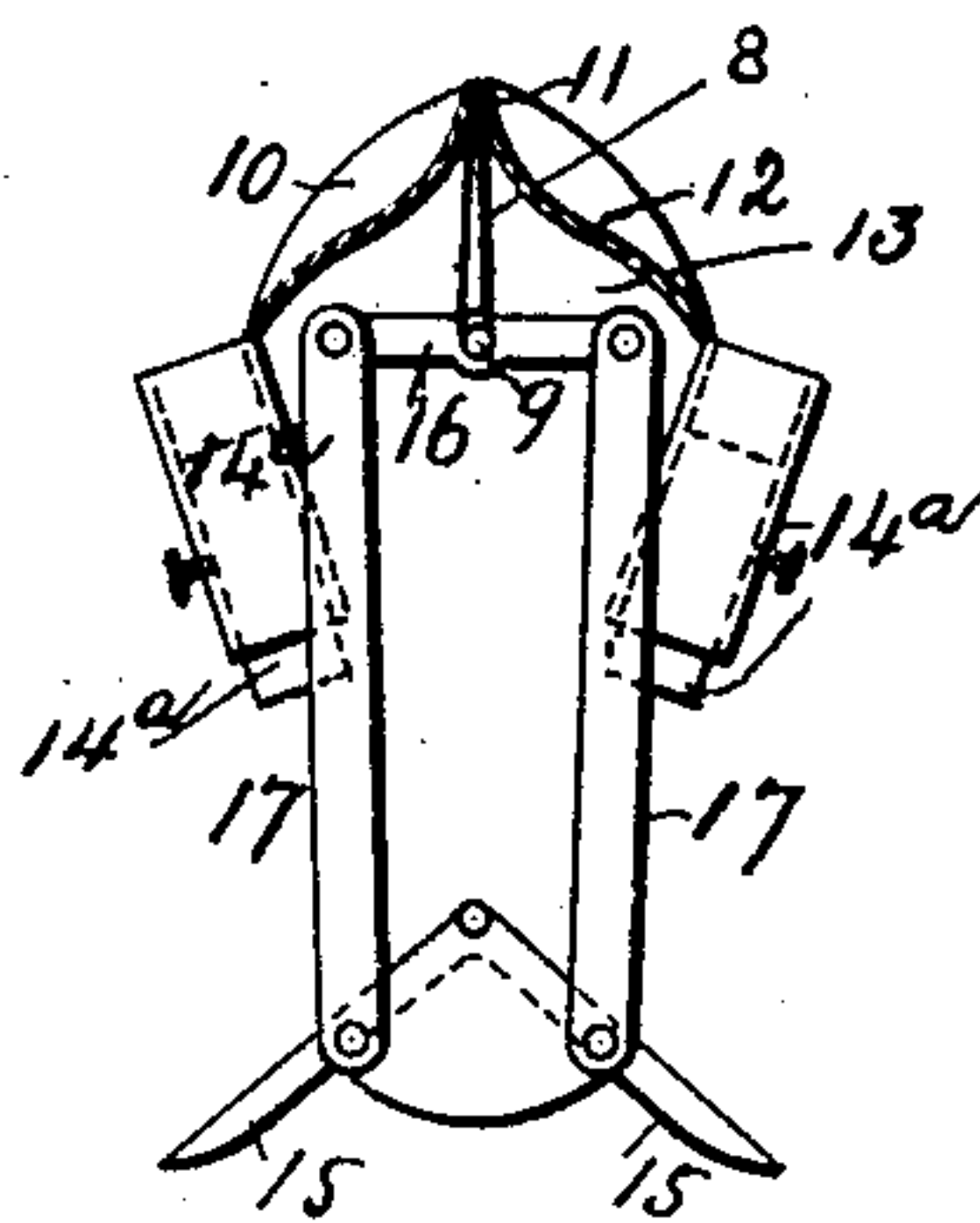


FIG. 6.



Inventor

Witnesses

Harry L. Amer.  
E. E. Masson

By

Harry Hager  
Jay D. Miller

Attorney



# UNITED STATES PATENT OFFICE.

HARRY HAGER, OF CHICAGO, ILLINOIS.

## AUTOMATIC WEIGHING-SCALE.

SPECIFICATION forming part of Letters Patent No. 765,921, dated July 26, 1904.

Application filed March 8, 1904. Serial No. 197,079. (No model.)

*To all whom it may concern:*

Be it known that I, HARRY HAGER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Automatic Weighing-Scales, of which the following is a specification.

This invention has relation to automatic weighing-machines, and more particularly to machines for weighing grain of irregular size and weight, such as coffee. In machines of this character it has been the general practice prior to my invention to at first measure approximately the material to be weighed and then make up the exact weight by feeding a small independent stream of the material from a feed-wheel or the like which was operated by power. These machines possess a further disadvantageous feature in that the bulk of the coffee or other grain to be weighed is fed to the scale-pan in a suspended stream, which makes it difficult to secure accurate weighing and is also a source of great harm to the delicate scale mechanism. By my present invention I eliminate both the independent continuous stream and the suspended stream.

The nature, characteristic features, and scope of the invention will be more clearly understood by reference to the following detailed description, taken in connection with the accompanying drawings, forming a part hereof, wherein—

Figure 1 is a front elevational view of an automatic weighing-scale embodying my improvements, a portion of the discharge-hopper being broken away to disclose one of the gates of the twin bucket. Fig. 2 is a side elevational view of the machine, a portion of the discharge-hopper being broken away to disclose the general arrangement of the twin bucket and its gates and connections for operating the same. In this view one wall of the bucket is removed, so as to illustrate the arresting device or saddle, which appears partly in section. Fig. 3 is a perspective view of the machine. Fig. 4 is a top view of the scale-beam. Fig. 5 is a top view of the arresting device or saddle; and Fig. 6 is a detail of the arresting device, the twin-bucket gates, and connecting-rods and also shows a modification

of the tubular parts or chutes of the arresting device.

My improvements may be embodied in a single or multiple bucket device; but for the sake of illustration I have shown and will describe them in connection with a twin-bucket apparatus.

1 represents the upper or receiving hopper, and 2 the bottom or discharge hopper, both being suitably supported and mounted in relation to an intermediate ordinary twin bucket. The receiving-hopper is provided with an air-vent 3, a cut-off 4, and with a suitable stream-regulator 5.

6 represents a twin bucket having a central portion 7 alined with the receiving-hopper, the upper portion 8 of said partition being pivotally mounted by means of a pintle 9, which penetrates holes in two opposite walls of the bucket. Mounted on said movable part 8, either detachably or otherwise, is a stream-arresting device in the form, preferably, of a saddle 10. Said saddle comprises a straight middle part 11 and sloping concavo-convex sides 12, connected by end walls 13 and terminating in tubular parts or chutes, which may consist of single elements, as shown at 14 in Fig. 2, or may consist of telescoping parts, as shown at 14<sup>a</sup> in Fig. 6. Said chutes are convergent in respect to one another and out of perpendicular in respect to the top of the saddle and operate to deflect grain into one or the other compartment of the bucket, according to the position of the saddle. The twin bucket 6 discharges into the hopper 2 and is provided with pivotal valve-gates 15, which are so arranged that when one is open the other is closed, and means are provided for transmitting motion from the gates 15 to the pintle 9, so as to cause the saddle to simultaneously reverse its position with each reverse movement of the valve-gates 15. Said means comprises a lever 16, rigidly mounted at one end of the pintle 9 and connected with the valve-gates 15 by means of connecting-rods 17, as clearly shown in Figs. 2 and 6. As before stated, the arrangement of the valve-gates is such that when one is open the other is closed, and this condition is maintained by means of an arm 18, applied to the



gates and having notched portions 19, adapted to be engaged at different times by a locking arm or lever 20, attached to the bucket. Said lever 20 is generally in engagement with one  
 5 or the other of said notched portions 19 and is not disengaged therefrom until the bucket descends under the weight of the material being weighed, when said arm or lever 20 is tripped by a bar or projection 21 and engages  
 10 the opposite notched portion.

In the operation of the machine the coffee or other granular material enters the receiving-hopper 1 and is fed by force of gravity through the stream-adjusting device 5 and  
 15 cut-off 4 and strikes the exposed side of the saddle or arresting device, from whence it is deflected through the tubular parts or chutes 14 into the corresponding compartment of the twin bucket, which then has its valve-gate 15  
 20 closed. The purpose of the tubular parts or chutes 14 is to force the material being weighed to pile up through them on the saddle, thereby raising the level of the coffee or other material being weighed to the top of the saddle, and  
 25 thus, in conjunction with the instantaneous oscillation of the saddle with the opening and closing of the gates, completely eliminating the suspended stream which would otherwise exist between them at the moment the scale  
 30 trips and causes instantaneous oscillation of the saddle and preventing the shock to the sensitive scale which would occur when the coffee or other material falls from a greater distance, the suspended stream being taken care of in the  
 35 present instance by the concave side portion of the saddle. Besides eliminating the suspended stream the saddle 10 also eliminates or takes the place of the independent continuous stream and weighs accurately without the  
 40 use of any power except the force of gravity. When sufficient coffee or other material being weighed accumulates in the bucket 6 to produce the desired weight, it causes the bucket to sink, whereby the locking arm or  
 45 lever 20 is caused to trip on the bar 21, thereby freeing the valve-gate 15, which was held in closed position through the medium of arm 18, and closing the other gate 15 and maintaining it closed until the operation is re-  
 50 peated. The coffee or other material being weighed falls into the discharge-hopper 2 and from there into the package.

The scale mechanism proper, which is indicated at A, forms no specific part of this in-  
 55 vention and is not referred to in detail for the reason that a minute description of it is not essential to a clear understanding of the present invention.

It will be obvious to those skilled in the  
 60 art to which this invention relates that modifications may be made in detail without de-

parting from the spirit and scope of the same. Hence I do not limit myself to the precise construction and arrangement of parts hereinbefore described, and illustrated in the ac- 65 companying drawings; but,

Having described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an automatic weighing-machine, the 70 combination of a supply-hopper, a twin bucket and its complemental automatic weighing mechanism, valve-gates for the compartments of said bucket, the arrangement being such that when one is open the other is closed, an 75 oscillating member intermediate the supply-hopper and the bucket and having tubular parts or chutes arranged to deflect the material to be weighed into one or the other compartment of the bucket, and an operative 80 connection between said oscillating member and the valve-gates, whereby the former responds to the movement of the latter, substantially as described.

2. In an automatic weighing-machine, the 85 combination of a supply-hopper having a cut-off and a stream-regulating device, a twin bucket and its complemental automatic weighing mechanism, valve-gates for the compartments of said bucket, the arrangement being 90 such that when one is open the other is closed, an oscillating member intermediate the supply-hopper and the bucket and having tubular parts or chutes arranged to deflect the material to be weighed into one or the other 95 compartment of the bucket, and an operative connection between said oscillating member and the valve-gates, whereby the former responds to the movements of the latter, substantially as described. 100

3. In an automatic weighing-machine, the combination of a supply-hopper, a twin bucket and its complemental automatic weighing mechanism, valve-gates for the compartments of said bucket, the arrangement being such 105 that when one is open the other is closed, an oscillating member intermediate the supply-hopper and the bucket and having tubular parts or chutes arranged to deflect the material to be weighed into one or the other com- 110 partment of the bucket, an operative connection between said oscillating member and the valve-gates, whereby the former responds to the movements of the latter, and a discharge-hopper into which said bucket empties, sub- 115 stantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

HARRY HAGER.

Witnesses:

WALTER LOWRY,  
 ALBERT G. HUBBARD.